REMARKS

Applicants, their principal representatives in Germany, and the undersigned have carefully reviewed the first Office Action on the merits in the subject U.S. patent application, together with the prior art cited and relied on in the rejection of the claims. In response, the Substitute Specification and the claims of the subject application have been amended. It is believed that the claims now pending in the subject application are patentable over the prior art cited and relied on, taken either singly or in combination. Reexamination and reconsideration of the application and allowance of the claims is respectfully requested.

As set forth in the Substitute Specification, as depicted in the drawings, and as recited in the currently pending claims,, the subject invention is directed to a method for storing unprepared and prepared rolls of material, typically rolls of paper, in a depot. The rolls of material are taken from the depot and are delivered to a web-fed rotary printing machine that uses the rolls of material to print various materials, such as daily newspapers, advertising inserts, magazines and the like. Depending on the type of production that the web-fed rotary printing machine will be asked to accomplish, the stock of rolls of material in the depot will be positioned and repositioned so that these rolls can be removed from the depot and transferred to the roll changers of the web-fed rotary printing machine in an optimized matter.

As may be seen in Fig. 1, the web-fed rotary printing press, generally at 01, utilizes a plurality of printing units, depicted as 01, to print a multiple-page product. The product is printed on a material web, such as a paper web, that is withdrawn from rolls of material . These rolls are supported by roll changers 06, again as seen in Fig. 1.

A roll supply system, generally at 02 is used to supply the rolls to the roll changers 06 of the printing press 01. As may be seen in Fig. 2, new rolls of material are received in one or more stock reception areas 18. It is to be kept in mind that these new rolls of material may be several feet in diameter, several feet in length and having a substantial weight. The rolls are directed, by a first transport system19, to a preparation circuit, generally at 35. They are unpacked by having an outer protective wrapping removed. They are also prepared for use in a flying web splice by having a leading end of the paper web that is wound on the roll preformed with a suitable splice tape or adhesive. Once the rolls of paper have been prepared, they are transported to a depot, generally at 21, as is also shown in Fig. 2. The depot 21 is not intended to be a long term storage area for all of the various rolls of paper that a printing facility may need in its inventory. Rather, the depot 21 is intended to provide short term storage for rolls of material that are intended to be used in a current or pending production run of the web-fed rotary printing machine. The depot also is intended to serve as a short term storage area for partial rolls of material which may have been used in a prior production run, are not required for a current production run, but will be utilized as an upcoming production run.

The depot 21 may have several shelf blocks, depicted in Fig 2 at 22, 23 and 24. Each of these shelf blocks has a plurality of storage areas into which rolls of paper can be placed. The shelf blocks are situated intermediate the stock reception area 18 and the printing press, generally at 01. As seen in Fig. 2, the printing press 01 has a large number of the printing units

04, each with its associated roll changer 06, aligned generally parallel to the shelf blocks that constitute the depot. A plurality of transport devices or shelf serving elements 30 travel along corridors between the shelf blocks and serve to transport the prepared and unprepared rolls of material within the depot, from the depot to the printing press 01 and also between the depot and the roll preparation circuit.

As each roll of material used by its respective one of the printing units 04, it becomes exhausted. At some point, before it completely runs out, the web from the exhausting roll is spliced to a leading end of a new roll that is supported by the same roll changer, in a process typically referred to as a flying web splice. The leading end of the fresh roll is prepared for such a flying web splice by having an adhesive applied to it. While there are many arrangements of adhesives that can be applied to the leading end of the new web, all have a limited period in which they are usable. It is thus important that these prepared rolls of material not be allowed to be stored in the depot for a period of time in excess of the time in which the adhesive on the leading edge will be effective.

The present invention is directed to a method for storing and repositioning unprepared and prepared rolls of material in the depot so that the arrangement of rolls of material in the depot will be as effective as possible for accomplishing the optimized delivery of the rolls to the web fed rotary printing machine. This is accomplished, as depicted in Fig. 1, and as is recited in currently amended claim 1. As may be seen in Fig. 1, a control system or a material flow system, generally at 05, receives information from a product planning system 03. That information will include information as to the type of the planned production run; i.e.; newspaper, advertising insert, magazine or the

like. It will also include information regarding the amount of paper that will be required, the type of paper that will be required and quite possibly the time during the production run when the paper will be required. The information may be supplied directly from the production planning system 03 to the inclined flow system 05 or it may travel through the printing press.

The material flow system includes an implemented logic system. It is the responsibility of the system to determine when unprepared rolls of paper need to be prepared in the preparation circuit, taking into consideration the shelf life or effective life of the adhesive, and the times at which the flying web splice will occur.

A production oriented storage strategy is prepared based on the information regarding the planned production run. The material flow system then looks at the current stock in hand in the depot or the occupancy of the depot. It may be that the depot has sufficient stock on hand to accomplish the planned or pending production run If not then, suitable rolls of material, typically unprepared, are assembled in the depot. In either instance, the material flow system uses the storage strategy that it has developed to position or to reposition the various prepared and unprepared rolls of material in the depot so that these rolls of material can be delivered to the roll changers 06 of the printing unit 04 of the printing machine 01 in an optimized manner. If unprepared rolls of material need to be prepared, they are returned to the roll preparation circuit 35, based on criteria provided by the logic device, so that they will be ready when needed, but will not become stale or unusable. If there are partial webs left in the depot from a prior use,

they are taken into account in the storage strategy developed by the material flow system and are repositioned in the depot or may be removed from the depot. The result is that the depot is used in its most efficient manner by storing the appropriate rolls in the appropriate location at the appropriate times to accomplish the goal of optimizing the delivery of these rolls to the web-fed rotary printing machine.

In the first Office Action of March 31, 2010, claims 37-70 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention. It was asserted that claim 37, as filed, merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claims 37-70 were also rejected under 35 U.S.C. 101 because the claimed invention was asserted to be directed to non-statutory subject matter. It was asserted that a method, in order to be considered a process under Section 101, must either be tied to another statutory class or must transform underlying subject matter. It was asserted that the preamble of the claims recite a process but that the body of the claims do not positively tie the process steps to the apparatus.

Claims 37-70 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,594,535 to Costanza, in view of U.S. Patent No. 4,803,634 to Ohno et al. It was asserted that Costanza "discloses a method of materials for use in a material process machine....", including the steps recited in claim 37, as filed. It was acknowledged that

Costanza does not explicitly teach the limitation of storing unprepared and prepared rolls of material for use by a material processing machine. It was asserted that the secondary reference to Ohno et al. teaches the limitation for storing unprepared and prepared rolls of material for use by a material processing machine. It was concluded that the method of assembly disclosed in the Costanza reference could be modified by the teachings of the Ohno et al. reference to arrive at the subject of the present invention.

In response, the claims of the subject application have been amended to more clearly patentably define the subject matter. It is believed tha the currently pending claims are not rendered obvious by the prior art cited and relied on, taken either singly or in combination.

Referring initially to the Costanza reference, U.S. Patent No. 6,594,535, it is noted that this reference is directed to a complex manufacturing process for producing devices that require a large number of component parts which have to be assembled in a production sequence. In the example used in Costanze, the articles which are being produced are tricycles. In contrast, in the present invention, the method, as recited in currently amended claim 37, is directed to a method for storing unprepared and prepared rolls of material in a depot of a web fed rotary printing machine. In the subject invention, the rolls of material, typically rolls of paper, are stored in a depot so that they can be positioned and repositioned in the depot in accordance with a production-oriented storage strategy which is usable to deliver the prepared rolls of material to the web-fed rotary printing machine from the depot.

In the Costanza reference, there are depicted a main production path 201 and a feeder production path 202, which feeder production path 202 could be used to supply a completed sub-assembly to the main production line, for utilization with the product being assembled. Raw inventory is supplied by outside suppliers to a to a raw inventory storage 205. While only one raw inventory storage area 205 is shown in Fig. 2A, there may be several such raw inventory storage areas 205.

Raw material, as needed, is delivered to several points of usage resupply 206. The material delivered to these points of usage resupply 206 are then transferred to line storage areas 207. It is the materials in these line storage areas 207 that are readily available for use in processes within the production paths 201 and 202. These line storage areas appear to each be adapted to store a specific part that will be used in the assembly of the constructed tricycle..

Each of the line storage areas 207-1 through 207-6 can accommodate a plurality of replenishment containers. When these various replenishment containers are empty, they are returned to the point of usage resupply areas 206. These point of usage resupply areas 206 are, in turn, restocked from the raw storage inventory 205. Once so restocked are relocated, they are returned to the line storage areas.

As discussed above, the Costanza reference is directed to a supply system for delivering diverse pieces and parts to various line storage areas along a production line. The subject invention, as recited in currently amended claim 37, is directed to a method for storing both

unprepared and prepared webs of material in a depot so that the prepared rolls of paper can be delivered to roll changers of the web-fed rotary printing machine as a result of a production-oriented strategy that was determined in a first partial process of a machine flow system that is part of the web-fed rotary printing machine.

In the Costanza device, the line storage areas 207-1 to 207-6 would appear to be equivalent to the depot of the present invention. However, in the Costanza device, there does not appear to be any teaching or suggestion of the steps of determining a production-oriented storage strategy for various material stored in the line storage area. It appears that each line storage areas in Costanza receives replenishment bins that are supplied to it from the point of usage storage facility. The replenishment bins appear to each carry a plurality of identical parts or components, such as seats or wheels that are to be used to build the tricycle in the described example. It does not appear that there is disclosed, in the Costanza reference, any production-oriented storage strategy in the line storage area or the use of such a strategy to reposition unprepared and prepared rolls of material so that the prepared rolls of material can be delivered to the roll changer of the printing machine and so that the previously unprepared rolls can be prepared so that they can then be properly arranged in the depot in accordance with the production-oriented storage strategy.

It is noted that the Office Action asserted, that Costanza at Column 21, lines 5-28, discloses the step of determing an actual stock of material in hand at the depot. The undersigned has reviewed the relied on portion of the Costanza reference and questions that assertion. In the

cited portion of Costanza, there is discussed the concept of "non-replenishable replenishment." This is asserted to mean that a quantity is defined as an amount of material which is not held in normal replenishment management at the production line. It may be a low volume component, one that is subject to sporadic demand, one that is subject to damage or spoilage or that may otherwise be inconvenient to store at or near the production path. It is not understood, at least to the undersigned, how that passage of the Costanza reference can be construed as determining an actual stock on hand at the depot.

The secondary reference to Ohno et al., U.S. Patent No. 4,803,634, was cited as teaching the limitation of storing unprepared and prepared rolls of material for use by a material printing machine. A review of this secondary reference shows that it does not include any production-oriented storage strategy of unprepared and prepared rolls in a depot for delivery of the prepared rolls to the roll changer of the web-fed rotary printing machine and for the preparation of previously unprepared rolls that were located in the depot.

In Ohno et al., there is disclosed and discussed a very substantial production process control in newspaper printing. A part of this overall system is, as depicted schematically in Fig. 1, a newsprint roll storage control subsystem, generally at 6. That system is depicted in greater detail in Figs. 28-30 and is disclosed in the specification of the subject patent, starting at the bottom of Column 25 of the patent and continuing on to the bottom of Column 27. As may be seen more clearly in Figs. 29A and 29B, there is provided a material roll warehouse, generally at 27. That would be generally equivalent to the stock reception area 18 of the subject application.

Rolls of newspaper are materially delivered to the warehouse 27 of Ohno et al. They are then taken from that warehouse 27 to a newspaper roll preparation floor 26. In this area, again as seen in Fig 29A, the direction of rotation of each roll is sensed. The roll is rotated, if necessary. Each roll is then directed to a splice preparation machine. This is the area where the leading end of each roll of paper is prepared for a flying web splice. The newspaper roll preparation floor 26 of Ohno et al. would be the equivalent of the preparation circuit 36 of the subject invention, as depicted more clearly in Fig 2. In the Ohno et al. device, all of the rolls of material, after having been prepared in the splice preparation device, are directed to one of several standby gates. They are stocked in these standby gates on the basis of size, as recited at Column 27, lines 32-34 of Ohno et al.

When each of the roll changers of the several newspaper machines needs a new prepared roll of material, it is released by the standby gate. Since the one of the roll changers that is requested, the roll of material is known, the roll of material is delivered to that roll changer.

It is unclear from the teachings of the Ohno et al. reference how the prepared rolls are placed in the space behind the standby gates. The reference recites that all of the rolls have been prepared and that all are stored by size. There is no discussion how the sizes of prepared rolls are arranged in the area behind the standby gates. There is clearly no disclosure, or teaching, in the Ohno et al. reference of positioning in the area behind the standby gates of both prepared and unprepared rolls. Ohno et al. further does not suggest that unprepared rolls could be stored behind the standby gates for return to the splice preparation device.

Once the prepared rolls, that were held behind the standby gates in the Ohno et al. reference, have passed through those gates, they are fed onto a circulating transport conveyor. As indicated in Fig. 29B of the Ohno et al. drawings, the circulating transport conveyor passes by the roll stands P1, P2 and P3. If one of those roll changers needs one of the prepared rolls, it is diverted off the circulating transport conveyor and is fed to the respective roll changer. If the prepared roll is not needed, it appears that it continues around the circuit but does not go back to the area behind the standby gates.

If Ohno et al. could be combined with Costanza, it is unclear what the result would be. Costanza does not show, or suggest, a system that is similar to that newsprint roll storage control subsystem 6 of Ohno et al. It is not clear how Ohno et al. could be integrated with Costanza since in Costanza, there is no recirculation of prepared materials in an endless path by potential use areas for the prepared rolls of material. In Costanza, bins of parts are transported from raw inventory to a point of usage resupply, and then to a line storage area. It does not appear that the Costanza device teaches, or suggests, any return of materials from the line storage areas to the point of usage resupply areas. Thus, it does not appear that any combination of Costanza and Ohno et al. would act to render obvious the method of the subject invention, as set forth in currently amended independent claim 37. It is thus believed that Claim 37, as currently amended, is patentable over the prior art cited and relied on by the Examiner in the rejection of this claim.

All of the rest of the claims now pending in the subject application are dependent, either directly in indirectly, on believed allowable, currently amended, independent Claim 37. It is believed that all of these claims are also now allowable.

During the preparation of this Amendment, the Substitute Specification of the subject application was reviewed. Several minor typographical errors were noted. These have been corrected in a manner which is not believed to cause any issues of new matter. Entry of these minor corrections is respectfully requested.

SUMMARY

The Substitute Specification of the subject application has been amended to correct several minor typographical errors, without the entry of any new matter. Independent Claim 37, and various ones of the dependent claims have been amended to more clearly patentably define the subject invention over the prior art cited and relied on, taken either singly or in combination. Allowance of the claims and passage of the application to issue is respectfully requested.

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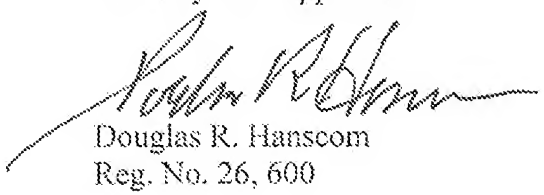

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June 23, 2010
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Attorney Docket: W1.2296PCT-US